

# ELECTRO-HARMONIX 16 SECOND DIGITAL DELAY

## OPERATING INSTRUCTIONS

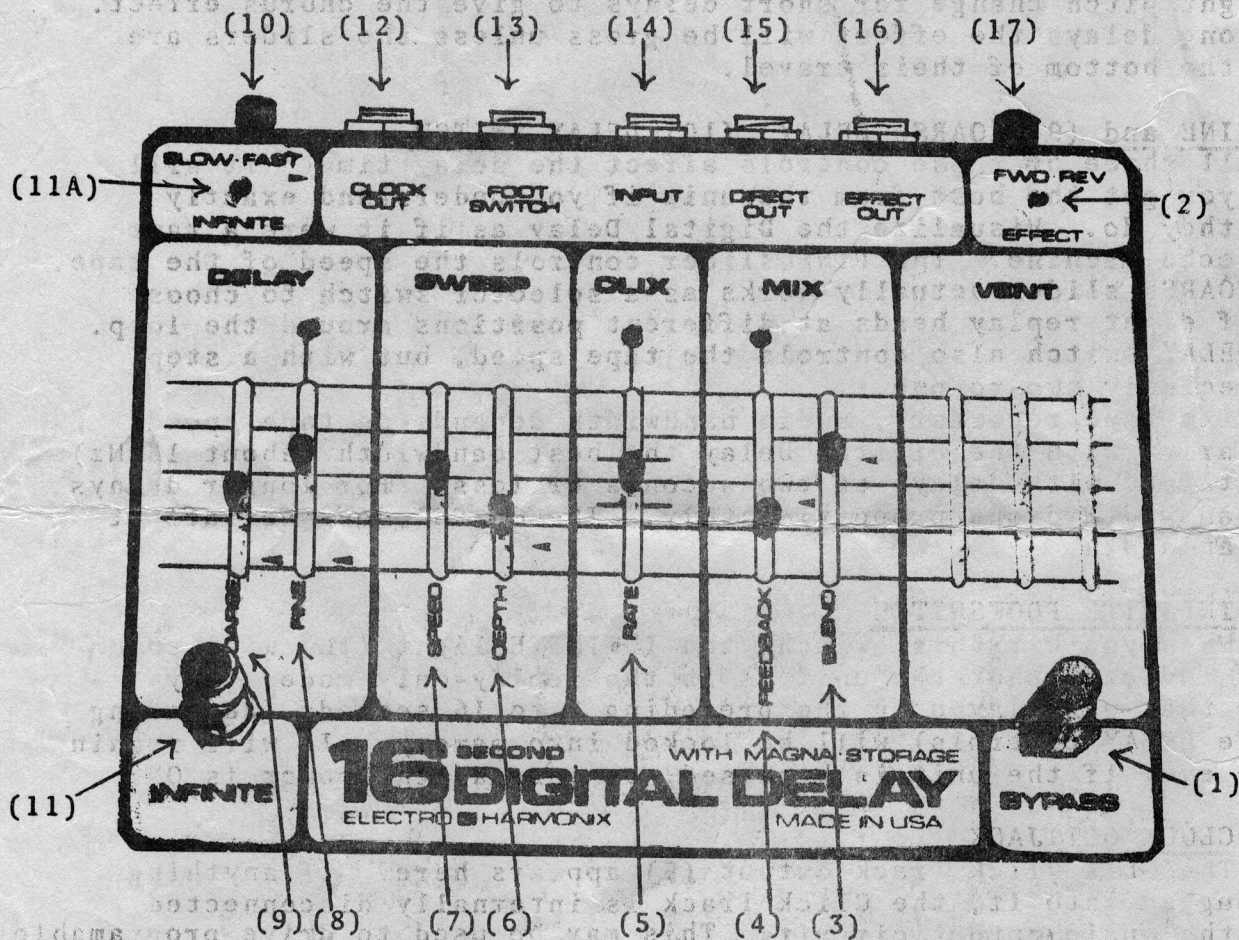
### SETTING UP:

Before plugging the unit into AC supply put all the sliders down. Plug the power cord into appropriate AC supply. This will automatically turn the unit ON.

Plug your instrument or microphone into the INPUT jack of the Digital Delay, and connect the EFFECT OUT jack to an amplifier.

Press the INFINITE footswitch once or twice so that the DELAY light (above FINE slider) goes off. This purges the memory.

NOTE: Unplugging the power cord from the AC supply will also purge the memory.



### WHAT THE CONTROLS DO:

#### (1) BYPASS FOOTSWITCH

This footswitch bypasses the entire unit. The EFFECT ON light (2) shows the status of this switch.

#### (3) BLEND

This slider blends the instrument and the delayed sound. Equal blend is halfway up.

#### (4) FEEDBACK

This control feeds some of the output back to the input. Note that each time the sound goes through this path a little audio quality is lost. This loss should be inaudible for the first ten repeats.

**MAKE SURE BLEND IS DOWN BEFORE TURNING ON THE POWER!**



(5) CLIX (Click Track)

The purpose of this function is to help you play in time with the delay. As you move the slider up, the clicks get faster. The tempo of the Clicks is also affected by the FINE Control (8). They will get SLOWER as this slider is moved up. NOTE: If you are playing in 3/4 time, you should keep the Clicks down to ONE per bar (only on the down-beat of each bar).

(6) SWEEP DEPTH and (7) SPEED

These sliders control a slow oscillator which can vary the delay time over a wide range. This delay variation comes out as a slight pitch change for short delays to give the chorus effect. For long delays the effect will be gross unless the sliders are near the bottom of their travel.

(8) FINE and (9) COARSE DELAY, (10) DELAY SWITCH

All three of these controls affect the delay time. It will help you get the best from the unit if you understand exactly what they do. Visualize the Digital Delay as if it were a tape loop echo machine. The FINE slider controls the speed of the tape. The COARSE slider actually works as a selector switch to choose one of eight replay heads at different positions around the loop. The DELAY switch also controls the tape speed, but with a step of precisely two-to-one.

With tape recorders, audio bandwidth depends on tape speed. Similarly, with the Digital Delay the best bandwidth (about 13kHz) is obtained with delays of two seconds or less. For longer delays the bandwidth drops proportionately. The COARSE does not affect the bandwidth.

(11) INFINITE FOOTSWITCH

When you hit this switch, the INFINITE light (11A) will come on to indicate that the unit is in the replay-only mode. Anything that was played in the preceding 2 to 16 seconds (depending on the DELAY controls) will be locked into memory. It will remain there even if the unit is bypassed, as long as the power is ON.

(12) CLOCK OUT JACK

The CLIX Click Track output (5) appears here. If anything is plugged into it, the Click Track is internally disconnected from the audio output circuits. This may be used to drive programmable rhythm units with a "Clock In" feature, such as the E-H DRM-15.

(13) FOOTSWITCH JACK

This jack may only be used to connect an Electro-Harmonix Footswitch Controller. This accessory has six illuminated footswitches which control all the major functions. Do not plug anything else into this jack.

(14) INPUT JACK

Designed for an electric guitar, it will accept all instruments with an output of 100mV nominal, 15db headroom. Input impedance is 150k ohm.

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(15) DIRECT OUT JACK

Provides an unprocessed signal out at all times regardless of whether the effect is in or out.

(16) EFFECT OUT JACK

Output level is +18dBm max (10k Load).

Output impedance is 120 ohm but should not drive less than a 600 ohm load.

Insertion loss is 0dB, although some gain can occur with the FEEDBACK slider up.

(17) FWD-REV SWITCH

Throwing this switch immediately gives a backwards replay of whatever was in the memory, starting with the oldest sound, and ending with the sound at the instant the switch was thrown.

DOUBLE TRACKING

Set the DELAY (10) switch to FAST (triangular mark ).

Put the COARSE DELAY slider about one-third of the way up.

Put the BLEND slider half-way up, other sliders down.

This setting gives a single echo with a delay of about a tenth of a second. To get multiple repeats - a more reverberant effect - move the FEEDBACK slider up.

There are three ways of increasing the delay time: flip the DELAY switch to SLOW; move the COARSE control up; or move the FINE control up. To get the best audio bandwidth (ie, highs), keep the FINE control down, and the DELAY switch on FAST.

CHORUS EFFECT

Put DELAY switch to FAST.

Set each slider to the triangular mark .

The effect can be made deeper by advancing the COARSE delay slider, or made less pronounced by backing off the DEPTH slider.

FLANGING

DELAY switch to FAST.

COARSE delay slider one-quarter up.

FINE delay slider one-quarter up.

SWEEP SPEED slider one-quarter up.

SWEEP DEPTH three-quarters up.

CLICK TRACK rate down.

FEEDBACK one-quarter to one-half up.

BLEND half-way up.

ENTER INFINITY!!

If you've actually got this far without messing with the INFINITE footswitch and the Click Track slider, you are hereby awarded the Electro-Harmonix Good Conduct Medal! These two controls should help you to use the long delays to record accompaniment passages and play against them without missing a beat. What you are about to use is a 16 second multi-track recording unit, which will make it possible for you to practice along with yourself, or create new melodies and counter melodies and backgrounds.

**MAKE SURE BLEND IS DOWN BEFORE TURNING ON THE POWER!**



TO SET UP A FOUR SECOND LOOP:

DELAY switch to FAST.

COARSE delay half-way.

FINE delay half-way.

SWEEP controls down.

Click Track a little up (to give you four to the bar).

FEEDBACK down.

BLEND half-way.

Wait about four seconds without playing to purge the memory, then move the FEEDBACK slider half-way up. Now play the rhythm part in time with the clicks. When it repeats, you can play the solo part. When this repeats, you can hit the INFINITE foot-switch. This causes the recorded parts to repeat forever without deterioration, and prevents any thing more from being recorded until you hit the footswitch again.(\*)

You can use the DELAY switch to transpose the recorded parts down an octave. This will also double the repeat time.

The FWD-REV switch replays everything backwards - an interesting effect on percussive instruments.

WARRANTY

Please consult your warranty-registration card for full details. If it becomes necessary to return this unit to the factory for warranty service, please send it to us securely packed, labeled and insured and include \$10.00 to cover the cost of handling and return shipping.

(\*) NOTE: In order to get continuous repeats of what is being recorded, the FEEDBACK slider MUST be left at least half-way UP, or else the material already recorded will only repeat once and then be erased from the memory.



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